July 29, 2022

Des Gillen
President
BP-Husky Refining LLC
4001 Cedar Point Road
Oregon, OH 43616
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des.gillen@se1.bp.com

City of Toledo
Division of Environmental Services
348 S. Erie Street
Toledo, OH 43604
Attn.: Peter Park

RE: Title V Quarterly Deviation Report – 2nd Quarter 2022

Dear Peter:

The Title V Permit (P00128721) issued to BP-Husky Refining LLC Toledo Refinery (BPH) effective on November 18, 2021, requires reports to be submitted quarterly outlining known deviations of emission limitations, operational restrictions, or control device operating parameter limitations. The permit also requires semi-annual reports outlining deviations of requirements in the permit, principally the monitoring, recordkeeping, and reporting (MRR) requirements. The permittee chooses to report known MRR semi-annual deviations identified during the quarter in its quarterly deviation report.

This letter and its attachments constitute the Title V Deviation Report reflecting the deviations identified during the second quarter of the 2022 calendar year (April 1 through June 30, 2022), including MRR deviations identified at the time of this report that are required to be reported semi-annually. The requirement for these reports is contained in Part A. of the Title V Permit as Standard Term and Condition, A.2.c. This report also satisfies the requirement for such reporting in OAC Rule 3745-77-07(A)(3)(c).

In order to consolidate reports, this letter and its attachments also constitute the deviation reports for all the Permits to Install (PTIs) that have been incorporated into the Title V Permit and that have PTI requirements for deviation reporting. All known deviations of the Title V Permit and currently effective PTIs are presented in the attached quarterly deviation report. The following also provides some additional background on a few of the issues relevant to this report in addition to the Toledo Integrated Unit (TIU) Turnaround (TAR).

2022 TIU TAR:

Beginning on April 18, BPH began an extended maintenance TAR, which is a planned event every 5-6 years that consists of bringing down a large portion of the refinery. Due to the magnitude of the TAR, these units have remained offline for the rest of the quarter.

As part of the shutdown, there were excess emissions from the Sulfur Recovery Units (SRUs). BPH is reporting these excess emission hours as a Title V deviation; however, this is a Title V deviation only. This is not a deviation of 40 CFR 60 Subpart Ja, pursuant to 40 CFR 60.8(c), which states that emissions during startup, shutdown, and malfunction

shall not be considered a violation of the applicable emissions limit unless otherwise specified in the applicable standard.

During the normal process of shutting down the FCCU, the bypass stack is utilized. During the planned shutdown of the FCC and CO Boiler, the ESP was shut down and the FCC Regenerator overhead off-gas was routed to the Bypass stack per safe shutdown procedures. When the off-gas was routed to the bypass stack, opacity exceeded the opacity limit for a time typical to shutdown events. Vent gas emitted through the CO Boiler/ESP stack for a short period of time after the ESP was shut down. The uncontrolled gas exceeded the opacity limit. Additionally, this shutdown was part of the FCCU TAR, so catalyst was purged as much as possible, which may have added to the opacity in the stack.

Annual Tank Inspections:

In early 2021, BPH completed an internal audit of its requirements that became applicable due to the revisions to 40 CFR 63 Subparts CC and UUU (Refinery MACT I and II) as part of EPA's Petroleum Refinery Sector Risk and Technology Review Rule (RSR). During this audit, it was discovered that fourteen (14) external floating roof (EFR) tanks subject to the 40 CFR 63 Subpart CC requirements for Group 1 storage tanks did not comply with all of the inspection requirements of 40 CFR 63 Subpart WW, which is referenced in 40 CFR 63.646 of Subpart CC. These deviations were reported in the 1Q2021 Title V deviation report. To correct the deviations, the annual inspections were completed earlier than required, as well as inspections on two (2) additional tanks with upcoming 10-year inspection due dates were conducted in order to maintain compliance. Upon further review, it was determined that by completing these inspections early, BPH was outside the 11–13-month annual inspection window as clarified in ADI M14008.

In ADI M140008, the EPA states its interpretation of annual as any time between eleven and thirteen months from the prior year's inspection date. With the interpretation of annual meaning between eleven and thirteen months, sixteen (16) Group One, external roof tanks did not meet the definition of annual as the inspection dates were sooner than eleven months apart for the subject tanks in the 2020- and 2021-year time frames.

Table 1:

PR#	EU ID	Roof Type	Title V	Months Apart	2020 Inspection Date	2021 Inspection Date
500157	T019	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	10 Months	4/30/2020	2/12/2021
500647	T020	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	5 Months	9/29/2020	2/15/2021
500186	T027	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	10 Months	4/21/2020	2/9/2021
500189	T028	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	9 Months	5/5/2020	2/10/2021
500099	T029	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	5 Months	9/15/2020	2/9/2021
500813	T030	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	9 Months	5/12/2020	2/15/2021
500814	T031	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	9 Months	5/19/2020	2/19/2021
500816	T033	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	6 Months	9/10/2020	3/4/2021
500817	T034	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	10 Months	5/7/2020	3/2/2021
500123	T036	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	7 Months	7/21/2020	2/3/2021
500120	T038	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	7 Months	7/16/2020	2/11/2021
500121	T039	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	10 Months	4/14/2020	2/10/2021
500158	T044	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	10 Months	4/28/2020	2/11/2021
500269	T096	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	9 Months	10/6/2020	7/6/2021
500270	T097	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	8 Months	6/25/2020	2/2/2021
500132	T120	External Floating Roof Tanks	GRP 1 - 40 CFR Part 63 Subpart CC	7 Months	8/11/2020	3/29/2021

Coker 3 Instrumentation:

Coker 3 instrumentation is used to demonstrate compliance with double quench standards per Table 13 of Subpart CC. BPH is verifying compliance of the Coker water drain temperature sensors (CPMS) for a minimum +/-1 percent accuracy as required in 40 CFR 63 Subpart CC – Table 13.

Reporting of CEM Deviations:

Prior to 2Q 2016, BPH had been reporting continuous emission monitor (CEM) downtimes and out-of-control times in Title V deviation reports as well as in CEMS summary quarterly reports. During Title V permit renewal discussions, TDES agreed with BPH that reporting CEM downtimes in the CEMs quarterly reports would be sufficient. Therefore, BPH is no longer reporting all CEM downtimes and out-of-control times in the Title V deviation report. BPH will continue to report CEM excess emission events in the Title V deviation report. In addition, whenever the total downtime and out-of-control time for an individual CEM exceeds 5% of any source operating time, this will be reported as a deviation in the Title V deviation report as well as included in the respective CEMs quarterly report. During 2Q 2022, the West Flare Total Sulfur CEMs Downtime >5%. The West Flare Total Sulfur analyzer malfunctioned after it became saturated with moisture from steam condensing and cleaning products produced used during the shutdown process. Several attempts to repair the analyzer were executed, including a complete overhaul of the analyzer and sample system; however, moisture continued to impact the analyzer until the West Flare was shut down on April 28 and remained offline for the remainder of the quarter. The sample probe was inspected during TAR, and its orientation was adjusted to more effectively shed the water droplets away from the analyzer.

This report and cover letter were prepared in accordance with a system designed to assure that qualified personnel evaluated all reasonably available information relevant to compliance with the terms and conditions of the Title V Permit over the period covered by the report and that they then reported to me their conclusions with respect to compliance. Based on information and belief formed after reasonable inquiry, the

statements and information in this document are true, accurate, and complete. However, the certification of this report and cover letter should not be interpreted to imply that I have personally reviewed all documents, data, or other information underlying the compliance determination. Nor should it be read to imply that the persons responsible for gathering and evaluating the information relied on in preparing this report and cover letter have reviewed all information generated by operations at the facility. As with any regulatory program, it is possible that there were deviations from permit conditions which may not be identified in the normal course of a good faith effort to implement the required compliance efforts under these programs.

In addition, the certification of this report and cover letter should not be construed as containing any admissions that the reported deviations or other events are violations of any applicable requirement. In some cases, applicable rules contain various defences and/or exemptions which may excuse particular deviations. In other cases, the question of whether a particular event constituted a deviation or violation may be subject to interpretational disputes. In still other cases, events may be reported as deviations out of an abundance of caution despite the fact there is insufficient information to determine whether the deviation actually occurred.

If you have any questions concerning this report, please contact Ashley Zapp (ashley.zapp@bp.com or 567-698-4410).

Sincerely,

DocuSigned by:
Des Gillen
90F20640AD13450...

Des Gillen
President - BP-Husky Refining LLC

Ohio Environmental Protection Agency Deviation Reporting Form			
FACILITY NAME		BP-Husky Refining LLC	
FACILITY ID (PREMISE NUMBER)		04-48-02-0007	
FACILITY ADDRESS		4001 Cedar Point Road, Oregon, OH 43616	
Issuance or most recent modification date		P0128721 - Minor Permit Mod effective 11/18/2021 (expires 8/3/2022)	
QUARTERLY Reporting Period		**SEMIANNUAL** Reporting Period (please indicate "N/A" below in the "From" and "To" fields if this report does not include semiannual deviation reporting)	
From: 04/01/2022	To: 06/30/2022	From: 04/01/2022	To: 06/30/2022
Total pages in <u>report,</u> including this one (signature page and sections I, II, and III)		19	
Please list any supporting attachments		n/a	
Reporting deadline		7/30/2022	

NOTE: The deviation reporting period shall be stated in the following format: "xx/xx/xx through zz/zz/zz" where xx/xx/xx and zz/zz/zz are the beginning and end dates for the deviation reporting period respectively.

SIGNATURE FOR STATEMENT

This statement shall be signed by the responsible official as defined in OAC rule 3745-77-01(GG). Making of any false material statement, representation or certification constitutes a violation of ORC 3704.05(H), and subjects the responsible party signing this statement to civil and/or criminal penalties as provided in ORC 3704.06(C) and ORC 3704.

CERTIFICATION

Based on information and belief formed after reasonable inquiry, I hereby affirm, as stated in OAC rule 3745-77-03(D), that the statements and information as transmitted in this Title V report are true, accurate and complete to the best of my knowledge.

Authorized Signature DocuSigned by: Des Gillen 30E30B40AD13450... Date July 29, 2022

Name (Please Print) Des Gillen Title President, BP-Husky Refining LLC

Ohio Environmental Protection Agency
Deviation Reporting

FACILITY NAME		BP-Husky Refining LLC	
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From: 04/01/2022	To: 06/30/2022	From: 04/01/2022	To: 06/30/2022
Reporting Deadline		7/30/2022	

(Part B) - Facility-wide Permit Requirement Reporting

Insignificant Emissions Unit Negative Declarations (Table 1)

List each insignificant emissions unit where no deviations of any PTI terms or applicable requirements for the listed emissions unit occurred, or add rows as necessary to the deviation reporting table (see next page) for reported deviations (one for each term as applicable; see detailed instructions for more information)

THERE WERE NO DEVIATIONS OF ANY PTI TERMS OR APPLICABLE REQUIREMENTS FOR THE FOLLOWING LISTED INSIGNIFICANT EMISSIONS UNITS IDENTIFIED IN (PART B.28) OF THE TITLE V PERMIT:
F002, G001, J008, J009, J011, L001, P030, P034, P038, P046, P047, P052, P061, P062, P064, P065, P066, P067, P068, P802, T042, T043, T048, T095, T112, T117, T121,
T135, T141, T145, T148, T149, T151, T159, T163, T169, T172, T173, T191, T196, T197, TMP196253

Ohio Environmental Protection Agency
Deviation Reporting

FACILITY NAME		BP-Husky Refining LLC	
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QUARTERLY Reporting Period		**SEMIANNUAL** Reporting Period (please indicate "N/A" below in the "From" and "To" fields if this report does not include semiannual deviation reporting)	
From: 04/01/2022	To: 06/30/2022	From: 04/01/2022	To: 06/30/2022
Reporting Deadline		7/30/2022	

(PART A) - General Terms and Conditions (Permit Requirement Reporting) (Table 1)

Mark the following box with an 'X' if no General Terms and Conditions deviations occurred

THERE WERE NO DEVIATIONS OF ANY OF THE TERMS AND CONDITIONS OF PART A OF THE TITLE V PERMIT DURING THE REPORTING PERIOD

Add rows as necessary to the following table for reported deviations (one for each General Term as applicable; see detailed instructions for more information) (Table 2)

TITLE V PERMIT TERM NO. Description	Reporting Requirement (Choose one)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN
				DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION		
	Quarterly	Semi-Annual		DATE / TIME START	DATE / TIME END			
A.19 - Each IEU that is subject to one or more applicable requirements shall comply with those applicable requirements.	X		Visual monitoring	6/3/2022	6/3/2022	During the annual seal inspection for T168 (tank 26), it was observed that the vacuum breaker was in the open position before the tanks designated set point.	The refinery believes that a sludge layer had built up on the bottom of the tank and lessened the space between the roof and the floor. The vacuum breaker opened due to the opening mechanism prematurely landing in sludge rather than striking the floor as designed to do.	The external floating roof was floated enough to reset the vacuum breaker when the malfunction was recognized. The low-level limit on the tank was increased to keep this from occurring again.

Ohio Environmental Protection Agency
Deviation Reporting

FACILITY NAME		BP-Husky Refining LLC	
FACILITY ID (PREMISE NUMBER)		04-48-02-0007	
FACILITY ADDRESS		4001 Cedar Point Road, Oregon, OH 43616	
Issuance or most recent modification date		P0128721 - Minor Permit Mod effective 11/18/2021 (expires 8/3/2022)	
QUARTERLY Reporting Period		**SEMIANNUAL** Reporting Period (please indicate "N/A" below in the "From" and "To" fields if this report does not include	
From: 04/01/2022	To: 06/30/2022	From: 04/01/2022	To: 06/30/2022
Reporting Deadline		7/30/2022	

Facility-wide Permit Requirements Terms and Conditions (Permit Requirement Reporting) - Negative Declarations (mark with an 'X' if applicable) **(Table 2)**

	THERE WERE NO DEVIATIONS OF ANY OF THE TERMS AND CONDITIONS OF PART B OF THE TITLE V PERMIT DURING THE REPORTING PERIOD SPECIFIED IN THIS REPORT

Part B - Facility-wide and/or IEU permit requirement (Permit Requirement Reporting) - Deviation Reporting (Table 3)

Add rows as necessary to the following table for reported deviations (one for each Term as applicable; see detailed instructions for more information)

TITLE V PERMIT or IEU PERMIT TERM NO./Description or PTI terms for IEUs	Quarterly	Semi-Annual	ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION: DEVIATION DURATION: DATE / TIME START	DEVIATION INFORMATION: DEVIATION DURATION: DATE / TIME END	DEVIATION INFORMATION: DESCRIPTION AND MAGNITUDE OF THE DEVIATION	PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION ? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT(S) DATE(S) (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT(S) DATE(S) (If no reports were made, state "NO REPORTS" in the space below)
Part B.7 - ...the permittee shall at all times comply with the effective rules and compliance dates as established by approved extensions, litigation, EPA clarifications, or rule changes as published even if the requirements reflected in the language of this permit are different. [Also reported in Part C - tbl 2]	X	X	Various	Various	Various	The specific deviations to the requirements effective after Feb 1, 2017 that have deviations are listed in Part C - tbl 2 of this deviation report and have been marked "RSR Deviations" for clarification. The details of these deviations for 2Q2022 are included in that table and only generally referenced here so as to not have duplicative information. *(Revisions to 40 CFR 63 Subparts CC and UUU (Refinery MACT I and II) were promulgated on December 1, 2015 as part of EPA's Petroleum Refinery Sector Risk and Technology Review Rule (RSR) and further revisions and clarifications were promulgated on July 13, 2016. The BP-Husky Title V permit includes the Refinery Rule (RSR) MACT requirements that apply to the refinery and that are effective through February 1, 2017. However, the requirements of the RSR that have compliance dates after February 1, 2017 (and thus are not yet effective) are only generally referenced at the Subpart level in this section of the permit.)*	No	No Report	No Report

Part B - Facility-wide and/or IEU permit requirement (Permit Requirement Reporting) - Deviation Reporting (Table 3)

Add rows as necessary to the following table for reported deviations (one for each Term as applicable; see detailed instructions for more information)

TITLE V PERMIT or IEU PERMIT TERM NO./Description or PTI terms for IEUs	Quarterly	Semi-Annual	ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION ? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT(S) DATE(S) (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT(S) DATE(S) (If no reports were made, state "NO REPORTS" in the space below)
				DEVIATION DURATION							
				DATE / TIME START	DATE / TIME END	DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
Part B.28 - The following insignificant emission units at this facility must comply with all applicable State and Federal regulations, as well as any emission limitations and/or control requirements contained within the identified permit to install for the emission unit. The insignificant emission units listed below are subject to one or more applicable requirements contained in a permit-to-install or in the SIP-approved versions of OAC Chapters 3745-17, 3745-18 and 3745-21 **(Also reported as a Part A deviation)**	X		Visual Monitoring	6/3/2022	6/3/2022	During the annual seal inspection for T168 (Tank 26), it was observed that the vacuum breaker was in the open position before the tanks designated set point. 40 CFR 63.1063(b)(4) (ref from 40 CFR 63.660 (Subpart CC) requires vacuum breakers to be closed at all times, except when required to be open to relieve excess pressure or vacuum in accordance with the manufacture's design.	The refinery believes that a sludge layer had built up on the bottom of the tank and lessened the space between the roof and the floor. The vacuum breaker opened due to the opening mechanism prematurely landing in sludge rather than striking the floor as designed to do.	The external floating roof was floated enough to reset the vacuum breaker when the malfunction was recognized. The low-level limit on the tank was increased to keep this from occurring again.	No	No Report	No Report

Part B - Facility-wide and/or IEU permit requirement (Permit Requirement Reporting) - Deviation Reporting (Table 3)

Add rows as necessary to the following table for reported deviations (one for each Term as applicable; see detailed instructions for more information)

TITLE V PERMIT or IEU PERMIT TERM NO./Description or PTI terms for IEUs	Quarterly	Semi-Annual	ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION ? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT(S) DATE(S) (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT(S) DATE(S) (If no reports were made, state "NO REPORTS" in the space below)
				DEVIATION DURATION							
				DATE / TIME START	DATE / TIME END	DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
Part B, 2.d)(5)n. [NSPS Subpart VVa as referenced by Subpart GGGa and Part 63 Subpart CC: 40 CFR 60.482-6a]: "Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR 60.482-1a(c) and 40 CFR 60.482-6a(d) and (e).."	X		LDAR Monitoring	8/11/2021	4/23/2022	There are four (4) open-ended lines visually identified by LDAR contractor in the Crude/Vac 1 (P011) process unit pumps (previously reported)	The OELs discovered are on drain lines to the sewer for pumps that are in heavy liquid service. OELs discovered and reported in a previous quarterly deviation report led BPH to initiate a site-wide OEL audit and to request that the LDAR contractor check all pumps in heavy liquid service for OELs.	These four OELs required maintenance and engineering. A work order was issued and an engineering package created. Maintenance and repairs were due to be completed by December 31, 2021; however, due to design issues the engineering package was required to be redesigned and then the pumps were unable to be isolated in the first quarter for maintenance repairs. During the refinery turnaround, the Crude/Vac 1 unit went offline for a maintenance shutdown on 4/23/2022 and at that time, the OEL's were no longer in VOC service. Repairs were made during the turnaround and was completed by the end of 2Q2022.	No	No Report	No Report

Other than the deviations listed above (or elsewhere in this report) there were no other deviations of Part II requirements of the Title V permit and other PTIs incorporated in the Title V permit.

Ohio Environmental Protection Agency
Deviation Reporting

FACILITY NAME		BP-Husky Refining LLC	
FACILITY ID (PREMISE NUMBER)		04-48-02-0007	
FACILITY ADDRESS		4001 Cedar Point Road, Oregon, OH 43616	
Issuance or most recent modification date		P0128721 - Minor Permit Mod effective 11/18/2021 (expires 8/3/2022)	
QUARTERLY Reporting Period		**SEMIANNUAL** Reporting Period (please indicate "N/A" below in the "From" and "To" fields if this report does not include semiannual deviation reporting)	
From: 04/01/2022	To: 06/30/2022	From: 04/01/2022	To: 06/30/2022
Reporting Deadline		7/30/2022	

PART C - Emissions Unit Terms and Conditions (Permit Requirement Reporting) - Negative Declarations (Table 1)

List each emissions unit where no deviations of any terms for the listed emissions unit occurred, or add rows as necessary to the second table (see next page) for reported deviations (one for each term as applicable; see detailed instructions for more information)

THERE WERE NO DEVIATIONS OF ANY OF THE TERMS AND CONDITIONS OF PART III (Section C) OF THE TITLE V PERMIT FOR THE FOLLOWING LISTED EMISSIONS UNITS:

Emission Unit ID	Please place an 'X' below if there were no Quarterly Deviations - If an 'X' is not indicated, the deviation(s) must be identified in Table 2 below	If applicable, please place an 'X' below if there were no Semiannual Deviations - If an 'X' is not indicated, the deviation(s) must be identified in Table 2 below
B015	X	X
B019	X	X
B029	X	X
B031	X	X
B032	X	X
B036	Part C-tbl 2 - H_2S deviation	X
F001	X	X
F005	X	X
F006	X	X
J004	X	X
J005	X	X
P007	Part C-tbl 2 - opacity deviation	Part C-tbl 2 - Table 41 deviation
P009	Part C-tbl 2 - SO_2 deviation	X
P010	X	X
P011	Part C-tbl 2- OEL Deviation	X
P014	X	X
P017 (see Note 2 below)	X	X
P025 (see Note 2 below)	Part C-tbl 2 - deviation	Part C-tbl 2 - deviation
P036 (see Note 2 below)	X	X
P037	Part C-tbl 2 - SO_2 deviation	X
P048	X	X

THERE WERE NO DEVIATIONS OF ANY OF THE TERMS AND CONDITIONS OF PART III (Section C) OF THE TITLE V PERMIT FOR THE FOLLOWING LISTED EMISSIONS UNITS:		
Emission Unit ID	Please place an 'X' below if there were no Quarterly Deviations - If an 'X' is not indicated, the deviation(s) must be identified in Table 2 below	If applicable, please place an 'X' below if there were no Semiannual Deviations - If an 'X' is not indicated, the deviation(s) must be identified in Table 2 below
P053	X	X
P054	X	X
P803	X	X
T047	X	X
T073	X	X
T102	X	X
T120	X	X
T139	X	X
T164 (see Note 2 below)	X	X
T170 (see Note 2 below)	X	X
T177	X	X
Group B1: B008, B009, B010	Part C-tbl 2 - H_2S deviation	X
Group B2: B017, B022	X	X
Group B3: B030, B033	X	X
Group B4: B034, B035	X	X
Group P1: P021, P022, P023 (see Note 2 below)	X	X
Group P2: P028, P029 (see Note 2 below)	X	X
Group P3: P041, P043 (see Note 2 below)	X	X
Group P4: P003, P004	Part C-tbl 2 - NHVcz deviation(s)	Part C-tbl 2 - Table 13 Deviation and monitoring deviations
Group P5: P055, P056, P057, P058	X	X
Group P6: P059, P060, P063	X	X
Group P7: P044, P045	X	X
Group T1: T078, T080, T081, T082, T086, T087, T088, T092,	X	X
Group T2: T113, T114, T115, T116	X	X
Group T3: T089, T153, T154, T155, T156, T157, T161	X	X
Group T4: T010, T011, T012, T013, T014, T051	X	X
Group T5: T045, T046	X	X
Group T6: T019, T084, T174, T187, T188	X	X
Group T7: T016, T017, T019, T020, T021, T024, T025, T026, T027, T028, T029, T030, T031, T032, T033, T034, T035, T036, T037, T038, T039, T040, T041, T044, T059, T060, T085, T090, T091, T096, T097	Part C-tbl 2 - Vac breaker lift deviation (T060 only)	X
Group T8: T166, T167	X	X
Group T9: T136, T137, T138	X	X

Notes:

1 - This unit has a vent which is routed to a flare and could potentially experience a deviation.

2 - This unit has a vent which is routed to a flare that experienced a deviation. If the vent was active at that time, it may constitute a deviation for this emission unit.

Ohio Environmental Protection Agency
Deviation Reporting

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From: 04/01/2022	To: 06/30/2022	From: 04/01/2022	To: 06/30/2022
Reporting Deadline		7/30/2022	

(PART C) Emissions Unit Terms and Conditions (Permit Requirement Reporting) - Deviation Reporting (Table 2)

THERE WERE NO DEVIATIONS OF ANY OF THE TERMS AND CONDITIONS OF Section C OF THE TITLE V PERMIT DURING THE REPORTING PERIOD SPECIFIED IN THIS REPORT

Add rows as necessary to the following table for reported deviations (one for each Term as applicable; see detailed instructions for more information)

EMISSIONS UNIT (EU) NUMBER & DESCRIPTION (See below)	TITLE V PERMIT TERM NO & DESCRIPTION	Reporting		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION?	MALFUNCTION VERBAL REPORT DATE (If no reports were	MALFUNCTION WRITTEN REPORT DATE (If no reports were
		Quarterly	Semi-Annual		DEVIATION DURATION Date / Time Start	DEVIATION DURATION Date / Time End	DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
P025 - Refinery WWT System	**Citation: P025: Part C.18.b)(1)i, b)(2)j.i: [40 CFR 60.690(a)(1)]** The provisions of Subpart QQQ apply to affected facilities located in petroleum refineries for which construction, modification, or reconstruction commenced after May 4, 1987. **Part C.18.c)(3)(c), d)(5)(c): [§60.692-2(a)]** -Each drain subject to 40 CFR 60.692-2 shall equipped with water seal controls. If a drain is in active service, water seal controls shall be checked by visual or physical inspection monthly.	X	X	Program Audit	4/22/2020	6/30/2022	Two area drains, twelve hub drains, and three catch basins in the Hydrogen Unit area were not controlled with water seals and have not been monitored pursuant to NSPS QQQ requirements. (previously reported)	An NSPS QQQ audit was conducted in late 2019 per the Consent Decree at the BPH refinery. This audit found that BPH inadvertently missed including two area drains, twelve hub drains, and three catch basins in the Hydrogen area in the refinery NSPS QQQ Management Program when junction boxes (manholes) were modified for the Flare Gas and Recovery Treating Project.	A compliance plan was developed for the findings from the QQQ Audit and was submitted to TDES on July 21, 2020. Per this plan, the audit finding for this equipment was to be reviewed and verified prior to becoming a final deviation. The verification for these drains was completed on December 31, 2020. The upgrades are scheduled to be completed by December 31, 2022.	No	No Report	No Report
P025 - Refinery WWT System	**Citation: P025: Part C.18.b)(1)i, b)(2)j.i: [40 CFR 60.690(a)(1)]** The provisions of Subpart QQQ apply to affected facilities located in petroleum refineries for which construction, modification, or reconstruction commenced after May 4, 1987. **Part C.18.c)(3)(c), d)(5)(c): [§60.692-2(a)]** -Each drain subject to 40 CFR 60.692-2 shall equipped with water seal controls. If a drain is in active service, water seal controls shall be checked by visual or physical inspection monthly.	X	X	Program Audit	4/22/2020	6/30/2022	Fourteen drain hubs, four clean-outs, ten catch basins, and five manholes that were part of the 1993 Benzene Stripper project were not designed to meet the requirements of NSPS QQQ - have not been monitored. (previously reported)	An NSPS QQQ audit was conducted in late 2019 per the Consent Decree at the BPH refinery. This audit found that the 2015 Applicability Assessment report that had previously identified the 1993 Benzene Stripper project as not triggering the requirements of NSPS QQQ was incorrect. The 14 drain hubs, 4 clean-outs, 10 catch basins and 5 manholes installed as part of the Benzene Stripper project are subject to the requirements of NSPS QQQ.	A compliance plan was developed for the findings from the QQQ Audit and was submitted to TDES on July 21, 2020. Per this plan, the audit finding for this equipment was to be reviewed and verified prior to becoming a final deviation. The verification for these drains was completed on January 15, 2021. Fourteen drain hubs, four clean-outs, two catch basins, and five manholes have been added to the program. Eight catch basins require upgrades to meet QQQ design criteria. The upgrades are scheduled to be completed by December 31, 2022.	No	No Report	No Report
P007 (FCCU / CO Boiler)	**Citation: P007, Part C.12. d)(17)(i) [40 CFR 63 Subpart UUU; 63.1572(c)(1)]** You must install, operate, and maintain each continuous parameter monitoring system according to the requirements in Table 41 of this subpart which include requirements regarding accuracy, calibrations and inspection/checks. *[Also reported in Part B-tbl 3 - RSR Deviation]*		X	Continuous Parameter Monitoring System (CPMSs)	1/1/2019	4/23/2022	FCCU Instrumentation used to demonstrate compliance may not be in compliance with all the installation, operation and maintenance requirements of MACT UUU Table 41. (previously reported)	The Refinery Sector Rule (RSR) modifications to MACT UUU require additional accuracy and maintenance requirements of certain FCCU process instrumentation. BPH discovered a flow meter not originally included for MACT UUU compliance.	A Capital Project has been initiated to confirm all of the Table 41 requirements have been met for two flow meters used to verify compliance with MACT UUU at the FCCU. One of the flow meters is known to be out of compliance. The FCCU was shut down on April 23, 2022 for turnaround and this deviation ended. The flow meter was replaced by end of 2Q 2022 during the 2022 FCC Unit Turnaround.	No	No Report	No Report

(PART C) Emissions Unit Terms and Conditions (Permit Requirement Reporting) - Deviation Reporting (Table 2)

THERE WERE NO DEVIATIONS OF ANY OF THE TERMS AND CONDITIONS OF Section C OF THE TITLE V PERMIT DURING THE REPORTING PERIOD SPECIFIED IN THIS REPORT

Add rows as necessary to the following table for reported deviations (one for each Term as applicable; see detailed instructions for more information)

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		Quarterly	Semi-Annual		DEVIATION DURATION Date / Time Start	DEVIATION DURATION Date / Time End	DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
P003/ P004 - East and West Hydrocarbon Flare	**Citation: P003/P004: Part C.40.d)(2)** The permittee shall comply with the applicable monitoring and record keeping requirements required in 40 CFR 63, Subpart CC: *[Note: there is not a specific Title V reference to the following requirement]* **[40 CFR 63 Subpart CC; 40 CFR 63.671(a)]** For each CPMS installed to comply with applicable provisions in §63.670, the owner or operator shall install, operate, calibrate, and maintain the CPMS as specified in paragraphs (a)(1) through (8) of this section. (1) Except for CPMS installed for pilot flame monitoring, all monitoring equipment must meet the applicable minimum accuracy, calibration and quality control requirements specified in Table 13 of this subpart. *[Also reported in Part B-tbl 3 - RSR Deviation]*		X	Continuous Parameter Monitoring System (CPMSs)	1/31/2020	6/30/2022	BPH has identified monitoring Instrumentation in the hydrocarbon flare system that does not meet all of the requirement of 40 CFR 63.671 of Subpart CC. (previously reported)	The Refinery Sector Rule (RSR) updated 40 CFR 63 Subpart CC requirements in 2015 to include new flare instrumentation requirements. BPH immediately began implementing their plan to come in to compliance and as they have operated, additional flare instrumentation has been identified that does not meet the MACT CC - Table 13 requirements.	This deviation was first identified in 1Q2020 for two flare gas flow meters. A capital project to bring the waste gas system flow meter into compliance was completed by the end of 2Q2022. A second capital project is in progress to bring six natural gas system flow meters and one hydrogen gas flow meter into compliance. The upgrades are scheduled to be completed by December 31, 2022.	No	No Report	No Report
P011 (Crude/Vac 1)	**Citation: P011 Part C.15.b)(1)g., b)(1)i, b)(2)d., b)(2)f.** The permittee shall comply with the applicable requirements for equipment leaks specified in 40 CFR Part 60, Subpart GGGa for equipment leaks. *Pursuant to 40 CFR 63.640(p)(2), equipment leaks that are subject to the provisions of 40 CFR 63 Subpart CC and 40 CFR Part 60, Subpart GGGa, are required to comply only with the provisions specified in 40 CFR Part 60, Subpart GGGa. [Also reported as a Part B-tbl 3 LDAR Deviation]*	X		LDAR Monitoring	8/11/2021	4/23/2022	Four (4) open-ended lines (OELs) were visually identified by an LDAR contractor in the Crude/Vac 1 (P011) process unit pumps (previously reported)	The OELs discovered are on drain lines to the sewer for pumps that are in heavy liquid service. OELs discovered and reported in a previous quarterly deviation report led BPH to initiate a site-wide OEL audit and to request that the LDAR contractor check all pumps in heavy liquid service for OELs.	These four OELs required maintenance and engineering. A work order was issued and an engineering package created. Maintenance and repairs were due to be completed by December 31, 2021; however, due to design issues the engineering package was required to be redesigned and then the pumps were unable to be isolated in the first quarter for maintenance repairs. During the refinery turnaround, the Crude/Vac 1 unit went offline for a maintenance shutdown on 4/23/2022 and at that time, the OEL's were no longer in VOC service. Repairs were made during the turnaround and were completed by the end of 2Q2022.	No	No Report	No Report

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T060 - PR-500065 EFR Tank	**Citation: T060 Part C.50.c)(1).b., C.50.c)(2)c. [40 CFR 63.646(f)(3); OAC 3745-21-09(Z)** Any automatic bleeder vent shall remain in the closed position, except when the external floating roof is floated off or landed on the roof leg supports. **[ref per 40 CFR 63.660 (Subpart CC) - 40 CFR 63.1063(b)(4)]** Each automatic bleeder vent (vacuum breaker vent) and rim space vent shall be closed at all times, except when required to be open to relieve excess pressure or vacuum, in accordance with the manufacturer's design. **[Also reported in Part B-tbl 3 - RSR deviation]**	X		Visual Monitoring	4/14/2022	4/15/2022	During the annual seal inspection, it was observed that the vacuum breaker was lifted and the rubber gasket was corroded.	The last seal inspection was completed on March 18, 2021. At that time, no defects were noted. BPH believes the probable cause is normal wear and tear of this type of gasket.	The roof was floated and vac breaker was confirmed to be reset on 4/15/2022. The vac breaker remained in the closed position until the gasket was replaced on 5/3/2022 and reinspected with no issues noted.	No	No Report	No Report
P004 - West Hydrocarbon Flare	**Citation: P004: Part C.40.b)(1)c [40 CFR 63 Subpart CC (63.644(a)(2))]** *[Note: there is not a specific Title V reference to the following requirement]* **[40 CFR 63.644(a)(2)]** Where a flare is used on and after January 30, 2019, the requirements of §63.670 shall be met. **[40 CFR 63.670(e)]** For each flare, the owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf) determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. *[Also reported in Part B-tbl 3 - RSR Deviation]*	X		Continuous Monitoring System	4/11/2022 at 14:15 hours	4/11/2022 at 14:30 hours	The combustion zone net heating value of the flare was measured less than the required 270 BTU/SCF for one (1) 15-minute quadrant during a flaring event.	An upset in the fuel gas system caused a treated fuel gas valve downstream of the flare seal drum to close while it was responding to pressure bounces in the fuel gas system. This loss of higher heating value gas led to the NHVcz exceedance.	Operations adjusted the natural gas purge to increase the NHV of the flared gas. This increased the NHV quadrant average up to 260 BTU/SCF, but not quickly enough to avoid the deviation. BP engineering is reviewing the control strategy with process engineers in order to consider a higher set point to begin supplemental natural gas and keep the NHV above the 270 BTU/SCF limit.	No	No Report	No Report

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P004 - West Hydrocarbon Flare	**Citation: P004: Part C.40.b)(1)c [40 CFR 63 Subpart CC (63.644(a)(2))]** *[Note: there is not a specific Title V reference to the following requirement]* **[40 CFR 63.644(a)(2)]** Where a flare is used on and after January 30, 2019, the requirements of §63.670 shall be met. **[40 CFR 63.670(e)]** For each flare, the owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf) determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. *[Also reported in Part B-tbl 3 - RSR Deviation]*	X		Continuous Monitoring System	4/12/2022 at 14:30 hours 4/12/2022 at 16:00 hours	4/12/2022 at 14:45 hours 4/12/2022 at 16:15 hours	The combustion zone net heating value of the flare was measured less than the required 270 BTU/SCF for two (2) 15-minute quadrant during a flaring event.	The East flare header developed a leak at the location where the Sulfuric Acid Alkylation unit's sub-header ties into it. An isolation plan was developed to execute the repair. The West flare was depressured, which limits flaring of waste gas including natural gas in order to install a live flare isolation blank for the repair for safety reasons. During this event the NHVcz dipped below the required 270 BTU/SCF.	Operations reduced the steam rate and adjusted the natural gas purge to increase the NHV above the required 270 btu/scf.	No	No Report	No Report
P004 - West Hydrocarbon Flare	**Citation: P004: Part C.40.b)(1)c [40 CFR 63 Subpart CC (63.644(a)(2))]** *[Note: there is not a specific Title V reference to the following requirement]* **[40 CFR 63.644(a)(2)]** Where a flare is used on and after January 30, 2019, the requirements of §63.670 shall be met. **[40 CFR 63.670(e)]** For each flare, the owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf) determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. *[Also reported in Part B-tbl 3 - RSR Deviation]*	X		Continuous Monitoring System	4/16/2022 at 15:00 hours	4/16/2022 at 15:30 hours	The combustion zone net heating value of the flare was measured less than the required 270 BTU/SCF for two (2) 15-minute quadrant during a flaring event.	In order to install flare blanks in preparation for TIU TAR, the West Flare was depressuized to perform the isolation. While performing this live flare work, for safety reasons the flaring of waste gas and natural gas were minimized. During this event the NHVcz dipped below the required 270 BTU/SCF.	Operations reduced the steam rate and, when it was safe to do so, adjusted the natural gas purge to increase the NHV above the required 270 btu/scf.	No	No Report	No Report

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P003- East Hydrocarbon Flare	**Citation: P003: Part C.40.b)(1)c [40 CFR 63 Subpart CC (63.644(a)(2))]** *[Note: there is not a specific Title V reference to the following requirement]* **[40 CFR 63.644(a)(2)]** Where a flare is used on and after January 30, 2019, the requirements of §63.670 shall be met. **[40 CFR 63.670(e)]** For each flare, the owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf) determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. *[Also reported in Part B-tbl 3 - RSR Deviation]*	X		Continuous Monitoring System	4/23/22 at 06:15 hours 4/23/22 at 09:45 hours	4/23/22 at 06:30 hours 4/23/22 at 10:00 hours	The combustion zone net heating value of the flare was measured less than the required 270 BTU/SCF for two (2) 15-minute quadrants during a flaring event.	During the flare isolation and shutdown process for TIU during a turnaround event, the NHVcz on the East Flare temporarily dropped below 270 BTU/SCF. During the transient abnormal operation, there was inconsistent hydrocarbon being let down to the flare system and nitrogen and steam purging, as well. These factors caused the NHVcz to dip below the required operating limit.	Operations reduced the steam rate and increased the Linde hydrogen and natural gas purge to increase the NHV of the vent gas.	No	No Report	No Report
P004 - West Hydrocarbon Flare	**Citation: P004: Part C.40.b)(1)c [40 CFR 63 Subpart CC)]** *[Note: there is not a specific Title V reference to the following requirement]* ***[40 CFR 63.670(i)]*** *- Flare vent gas, steam assist and air assist flow rate monitoring. ...If assist air or assist steam is used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate of assist air and/or assist steam used with the flare. [Also reported in Part B-tbl 3 - RSR Deviation]* **63.670(m) Calculation methods for determining combustion zone net heating value. The owner or operator shall determine the net heating value of the combustion zone gas (NHVcz) as specified in paragraph (m)(1) or (2) of this section, as applicable.** **and Table 13 requirements were not met.**	X		Continuous Monitoring System	4/23/22 at 10:22 hours	4/26/22 at 09:30 hours	The flowmeter measuring steam flow rate on the West flare failed and was not able to continuously monitor the steam used with the flare.	The Ring Steam flowmeter on the circuit board (FI2203) failed. Because steam flow is part of the NHVcz calculation for the West flare, the NHVcz could not be accurately calculated without using engineering calculations.	Operations returned the natural gas and steam control valves to positions they were in immediately before the monitoring failure when the NHVcz was in compliance. An attempt was made to repair the meter which was unsuccessful. The meter was replaced during the West Flare outage in the TIU TAR.	No	No Report	No Report

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P003 - East Hydrocarbon Flare	**Citation: P003: Part C.40.b)(1)c [40 CFR 63 Subpart CC)]** *[Note: there is not a specific Title V reference to the following requirement]* ***[40 CFR 63.671(a)(1)]*** *(a)(1) Except for CPMS installed for pilot flame monitoring, all monitoring equipment must meet the applicable minimum accuracy, calibration and quality control requirements specified in table 13 of this subpart. Table 13 reqts - Conduct a flow sensor calibration check at least biennially (every two years); [Also reported in Part B-tbl 3 - RSR Deviation]*		X	Continuous Monitoring System	5/31/2022	6/30/2022	The flow meter on the East flare measuring hydrogen did not complete its biennial calibration as required by May 31, 2022.	The flow meter on the Linde Hydrogen vent to the East flare is a Coriolis flowmeter. The manufacturer recently reported that the transmitter cannot run the required smart meter verification under flowing conditions. Therefore, the line must be out of service to complete the calibration. Since this line is not normally in service, it was not previously identified to be an issue. The refinery is currently in the middle of their 5-6 year site-wide turnaround and is utilizing this line under an alternate baseline on a continuous basis to mitigate fuel gas imbalances during the turnaround. Due to these abnormal conditions, the calibration cannot be completed without creating the risk of unstable operations and increased emissions due to potential flaring of process gas.	The refinery will complete the calibration during 3Q 2022, once the refinery has returned to normal operation following the TIU TAR when the line can safely be taken out of service.	No	No Report	No Report
P003 - East Hydrocarbon Flare	**Citation: P003: Part C.40.b)(1)c [40 CFR 63 Subpart CC (63.644(a)(2))]** *[Note: there is not a specific Title V reference to the following requirement]* **[40 CFR 63.644(a)(2)]** Where a flare is used on and after January 30, 2019, the requirements of §63.670 shall be met. **[40 CFR 63.670(e)]** For each flare, the owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf) determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. *[Also reported in Part B-tbl 3 - RSR Deviation]*	X		Continuous Monitoring System	5/11/2022 at 23:15 hours	5/11/2022 at 23:30 hours	The combustion zone net heating value of the flare was measured less than the required 270 BTU/SCF for one (1) 15-minute quadrants during a flaring event.	During the refinery turnaround, when all refinery H_2S processing units were undergoing maintenance, high H_2S process gas from the refinery was being routed to Chemtrade. Chemtrade experienced an unexpected trip offline. This upset required the acid gas stream previously going to Chemtrade to be re-routed to the East Flare Gas Recovery System. Chemtrade's A-plant experienced an unplanned outage after their final absorbing tower pump tripped offline. The acid gas in the East flare caused the net heating value to drop below the required 270 Btu/Scf.	The excess acid gas was routed to the flare gas recovery system to recover as much acid gas as possible. Operations requested all areas halt any flaring activity and made unit rate adjustments to minimize the impact and accommodate the reduction in acid gas processing capacity. Upon investigation, Chemtrade discovered corrosion on the remote start/stop switch which caused their A-Plant to trip offline. Chemtrade replaced the switch and implemented corrective measures to address the accelerated corrosion found on this particular switch.	No	No Report	No Report

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P003 - East Hydrocarbon Flare	**Citation: P003: Part C.40.b)(1)c [40 CFR 63 Subpart CC (63.644(a)(2))]** *[Note: there is not a specific Title V reference to the following requirement]* **[40 CFR 63.644(a)(2)]** Where a flare is used on and after January 30, 2019, the requirements of §63.670 shall be met. **[40 CFR 63.670(e)]** For each flare, the owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf) determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. *[Also reported in Part B-tbl 3 - RSR Deviation]*	X		Continuous Monitoring System	5/13/2022 at 12:45 hours	5/13/2022 at 13:00 hours	The combustion zone net heating value of the flare was measured less than the required 270 BTU/SCF for one (1) 15-minute quadrants during a flaring event.	During the refinery turnaround, when all refinery H_2S processing units were undergoing maintenance some of the high H_2S concentration process gas was routed to Chemtrade. When Chemtrade tripped offline, the steam rate to the East flare was increased to prevent a smoking flare. Following this event, the steam was not immediately returned to normal and the higher than average steam rates combined with third party venting to the East Flare caused one quadrant of the NHVcz to dip below the required level of 270 BTU/SCF.	The third party vent to the East flare was closed which ended the flaring event and the steam flow rate was returned to typical flow rates.	No	No Report	No Report
P003 - East Hydrocarbon Flare	**Citation: P003/P004, Part C.40.b)(2)d. [40 CFR 60.103a.(h)]** The permittee shall not burn in any affected flare any fuel gas that contains H_2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis. The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this limit.	X		Continuous Monitoring System	6/14/2022 at 10:00 hours	6/14/2022 at 18:00 hours	H_2S emissions exceeded 162 ppmv on a 3-hour rolling average basis for a total of eight (8) 3-hour average exceedances from the East flare.	During the refinery-wide planned maintenance turnaround, a leaking connection was identified that was not part of the original planned work scope. A BPH operator took the opportunity to repair the identified leaking connection. However, the operator misunderstood the flow of the header and closed the wrong valve. This inadvertantly isolated the instrument air header to the CV2 unit, which was not shut down at that time. All of the control valves in the CV2 unit went to their failsafe position causing the CV2 furnace trip and a CV2 unit upset.	The operator failed to identify the correct point of isolation due to the complexity of the system. The operator was coached on the importance of developing an isolation plan following the incident. The incident was communicated across the site to reinforce site procedural requirements for Control of Work and Isolations.	No	No Report	No Report

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		Quarterly	Semi-Annual		DEVIATION DURATION Date / Time Start	DEVIATION DURATION Date / Time End	DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
P004 - West Hydrocarbon Flare	**Citation: P004 Part C.40.d)(4)t [40 CFR 60.107a(e)(1)**: The permittee shall install, operate, calibrate and maintain an instrument or instruments for continuously monitoring and recording the concentration of total reduced sulfur in gas discharged to the flare.		X	Continuous Monitoring System	4/22/2022 at 11:49 hours	4/28/2022 at 14:27 hours	The Total Reduced Sulfur continuous analyzer on the gas discharged to the West Flare was not continuously monitoring and recording while there was regulated material going to the flare.	Steam condensation and cleaning products that were being routed to the flare during the refinery shutdown events as part of the refinery turnaround saturated the Total Reduced Sulfur analyzer on the West Flare causing it to malfunction.	The analyzer probe was inspected during the TAR and its orientation was adjusted to more effectively shed the water droplets away from the analyzer. A review of the sample system heat tracing will be also conducted post TAR. The final repairs were made and the sample system was overhauled.	No	No Report	No Report
P004 - West Hydrocarbon Flare	**Citation: P003, P004: Part C.40.d)4.t [40 CFR 60.107a(e)(1)]** The permittee shall install, operate, calibrate and maintain an instrument or instruments for continuously monitoring and recording the concentration of total reduced sulfur in gas discharged to the flare. [40 CFR 60.7(e)] Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under 40 CFR 60.7(d), all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows: 2) All continuous monitoring systems referenced by 60.7(c) for measuring emissions, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.		X	Continuous Monitoring System	4/1/2022	6/30/2022	The Total Reduced Sulfur continuous analyzer for the West Flare was down for 147 hours, which exceeded 5% of the operating hours of the West Flare which was unusually low as a result of the site wide turnaround (637.5 hours) during the second quarter 2022.	Steam condensation and cleaning products that were being routed to the flare during the refinery shutdown events as part of the refinery turnaround saturated the Total Reduced Sulfur analyzer on the West Flare causing it to malfunction.	The analyzer probe was inspected during the TAR and its orientation was adjusted to more effectively shed the water droplets away from the analyzer. A review of the sample system heat tracing will be also conducted post TAR. The final repairs were made and the sample system was overhauled.	No	No Report	No Report

(PART C) Emissions Unit Terms and Conditions (Permit Requirement Reporting) - Deviation Reporting (Table 2)

THERE WERE NO DEVIATIONS OF ANY OF THE TERMS AND CONDITIONS OF Section C OF THE TITLE V PERMIT DURING THE REPORTING PERIOD SPECIFIED IN THIS REPORT

Add rows as necessary to the following table for reported deviations (one for each Term as applicable; see detailed instructions for more information)

EMISSIONS UNIT (EU) NUMBER & DESCRIPTION (See below)	TITLE V PERMIT TERM NO & DESCRIPTION	Reporting		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION?	MALFUNCTION VERBAL REPORT DATE (If no reports were	MALFUNCTION WRITTEN REPORT DATE (If no reports were
		Quarterly	Semi-Annual		DEVIATION DURATION Date / Time Start	DEVIATION DURATION Date / Time End	DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
P007 (FCC/CO Boiler)	**Citation: P007 Part C.12.b)(1), f)(1)a.; [OAC rule 3745-17-07(A)].** Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, unless otherwise specified by the rule.		X	Continuous emissions monitoring	4/20/2022	Bypass stack had 30 6-minute averages (180 minutes) CO Boiler/ESP stack had 72 6-minute averages (432 minutes)	The opacity of the FCCU bypass stack exceeded 20% on a 6-minute average. The opacity of the CO Boiler/ESP stack exceeded 20% on a 6-minute average.	During the planned shut down of the FCC and CO Boiler, the ESP was shutdown and the FCCU Regenerator overhead off-gas was routed to the Bypass stack per shutdown procedures. When the off-gas was routed to the bypass stack, opacity exceeded the opacity limit for a time typical to shutdown events. Vent gas emitted through the CO Boiler/ESP stack for a short period of time after the ESP was shut down. The uncontrolled gas exceeded the opacity limit. Additionally, this shutdown was part of the turnaround, so catalyst was purged as much as possible which may have added to the opacity in the stack.	At the beginning of the FCCU shutdown procedure, for safety reasons, the ESP is de-energized prior to routing the off-gas to the bypass vent or shutting down the CO Boiler. Efforts to minimize opacity exceedances during the shutdown were implemented to the extent possible.	No	No Report	No Report
P036 - (Coker 3)	**Citation P036 Part C.19.b)(1)g [40 CFR Part 63, Subpart CC (63.657(f)(2) - Delayed coking unit decoking operation standards]** The owner or operator must maintain the drain water temperature below 210 degrees Fahrenheit during the partial drain associated with the double-quench event. (NOTE: This specific language is not in the Title V, but condition C.19.b)(1)g references compliance 40 CFR Part 63 Subpart CC.) [Also reported as a Part B-tbl 3 RSR Deviation]	X		Temperature Monitoring	4/4/2022 4/16/2022	4/4/2022 4/16/2022	There were two (2) double quenching events that occurred where the drain water temperature exceeded 210 F.	During the double quench event, draining is conducted with manual valves. There are no records of when the drain is opened or closed so BPH is unable to determine if draining was occurring when the drain water temperature exceeded 210 F. However, based on data available in the refinery's PI Process book data, it appears that a deviation may have occurred.	The drain valve position is now recorded in the PI Process book in order that records will be available on the drain water temperature when the water is being drained. Operators were further trained in compliance with the required temperature limit.			

(PART C) Emissions Unit Terms and Conditions (Permit Requirement Reporting) - Deviation Reporting (Table 2)

THERE WERE NO DEVIATIONS OF ANY OF THE TERMS AND CONDITIONS OF Section C OF THE TITLE V PERMIT DURING THE REPORTING PERIOD SPECIFIED IN THIS REPORT

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EMISSIONS UNIT (EU) NUMBER & DESCRIPTION (See below)	TITLE V PERMIT TERM NO & DESCRIPTION	Reporting		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION?	MALFUNCTION VERBAL REPORT DATE (If no reports were	MALFUNCTION WRITTEN REPORT DATE (If no reports were
		Quarterly	Semi-Annual		DEVIATION DURATION Date / Time Start	DEVIATION DURATION Date / Time End	DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
P009 - SRU 1	**Citation: P009 Part C.13.b)(2)g., b)(2)l.a, f)(1)b. [40 CFR 60.104(a)(2)(i) and 40 CFR 63.1568(a)(1)(i)]** The permittee shall not discharge or cause the discharge of any gases into the atmosphere from the Claus sulfur recovery plant containing in excess of 250 ppm SO2 by volume (dry basis) at zero percent excess air as a rolling, 12-hour average. *[per CD - subject to NSPS Ja - citation 40 CFR 60.102a(f)(1)(i)]* ***NOTE:*** *this is a Title V Deviation only. This is not a Deviation of 40 CFR 60 Subpart Ja, pursuant to 40 CFR 60.8(c), which states that emissions during startup, shutdown, and malfunction shall not be considered a violation of the applicable emissions limit unless otherwise specified in the applicable standard.*	X		Continuous Monitoring System (CMS)	4/21/2022 at 3:00 hours	4/22/2022 at 4:00 hours	SO_2 emissions exceeded 250 ppmv on a 12-hour rolling average basis for a total of twenty six (26) 12-hour averages	On April 20, 2022, the Refinery commenced shutdown processes for Sulfur Recovery Units (SRU) #1, #2 and #3 as part of a planned shutdown to perform maintenance activities in the units. During the planned shutdown, the SO_2 concentration exceeded the 250 ppm 12-hr rolling average for a total of twenty-six (26) hours when the unit diverted around the Tail Gas Treating Unit.	During the shutdown of the SRUs the Refinery followed procedures to minimize excess emissions consistent with safety and good air pollution control practices. Per standard refinery shutdown procedures, the SRU shutdown requires the SRU to shut down prior to shutting down the Tailgas Treating unit, which minimizes emissions due to acid gas being removed from the system. Operations continued to feed natural gas to the unit for as long as possible to remove as much sulfur and sulfur species as possible prior to diverting around the TGU.	No	No Report	No Report
P037 - SRU2/3	**Citation: P037 Part C.20.b)(2)h., b)(2)m, d)(11)b, f)(1)i. [40 CFR 60.104(a)(2)(i) and 40 CFR 63.1568(a)(1)(i)]** The permittee shall not discharge or cause the discharge of any gases into the atmosphere from the Claus sulfur recovery plant with an oxidation control system or a reduction control system followed by incineration, in excess of 250 ppm SO2 by volume (dry basis) at zero percent excess air as a rolling, 12-hour average. *[per CD - subject to NSPS Ja - citation 40 CFR 60.102a(f)(1)(i)]* ***NOTE:*** *this is a Title V Deviation only. This is not a Deviation of 40 CFR 60 Subpart Ja, pursuant to 40 CFR 60.8(c), which states that emissions during startup, shutdown, and malfunction shall not be considered a violation of the applicable emissions limit unless otherwise specified in the applicable standard.*	X		Continuous Monitoring System (CMS)	4/21/2022 at 18:00 hours	4/22/2022 at 15:00 hours	SO_2 emissions exceeded 250 ppmv on a 12-hour rolling average basis for a total of twenty two (22) 12-hour averages	On April 20, 2022, the Refinery commenced shutdown processes for Sulfur Recovery Units (SRU) #1, #2 and #3 as part of a planned shutdown to perform maintenance activities in the units. During the planned shutdown, the SO_2 concentration exceeded the 250 ppm 12-hr rolling average for a total of twenty-six (26) hours when the unit diverted around the Tail Gas Treating Unit.	During the shutdown of the SRUs the Refinery followed procedures to minimize excess emissions consistent with safety and good air pollution control practices. Per standard refinery shutdown procedures, the SRU shutdown requires the SRU to shut down prior to shutting down the Tailgas Treating unit, which minimizes emissions due to acid gas being removed from the system. Operations continued to feed natural gas to the unit for as long as possible to remove as much sulfur and sulfur species as possible prior to diverting around the TGU.	No	No Report	No Report

(PART C) Emissions Unit Terms and Conditions (Permit Requirement Reporting) - Deviation Reporting (Table 2)

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		Quarterly	Semi-Annual		DEVIATION DURATION Date / Time Start	DEVIATION DURATION Date / Time End	DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
B008 - Iso 2 Feed Heater; **B009** - Iso 2 Stabilizer Reboiler; **B010** - Iso 2 Splitter Reboiler;	**Citation: B008, B009, B010: Part C.33.b)(2)b., c)(2), f)(1)a**; **40 CFR 60.104(a)(1)** The permittee shall not burn in this emissions unit any refinery fuel gas that has a volume-weighted, rolling 3-hour average H2S concentration greater than 0.10 grain per dry standard cubic foot, except during periods of startup, shutdown or malfunction of the refinery fuel gas amine systems provided that BPH shall to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions.	X		Continuous Monitoring System (CEMS)	5/7/2022 at 01:00 hours	5/7/2022 at 15:00 hours	The East Fuel Gas Mix Drum exceeded the 162 ppm H_2S limit for fourteen (14) 3-hour averages.	During the refinery turnaround, because the SRUs and TIU system were offline, some of the high H_2S concentration process gas was routed to Chemtrade. An upset occurred in the East Side Amine strippers causing a pressure surge in the acid gas being sent to Chemtrade which caused their plant to trip offline. After Chemtrade tripped, the high H_2S process and purge gases were routed back to the refinery's flare gas recovery system, which ultimately went to the fuel gas system and caused the H_2S exceedance in the East Side Fuel gas.	While Chemtrade was coming back online after the trip, operations increased the temperature in the amine system to increase stripping and better treat the high H_2S gas being sent to the refinery fuel gas recovery system. The high H_2S process and purge gas was gradually transferred back to Chemtrade in order to keep Chemtrade from tripping off again, which would have led to another upset and increased emissions.	No	No Report	No Report
B036 - Reformer 3 heater	**Citation: B036: Part C.6.b)(2)b.i, f)(1)b. [40 CFR 60.104(a(g)(1)(ii)]** The permittee shall not burn in any fuel gas combustion device any fuel gas that contains H2S in excess of 162 ppmv determined hourly on 3-hour rolling average basis and H2S in excess of 60 ppmv determined daily on a 365- successive calendar day rolling average basis.	X		Continuous Monitoring System (CEMS)	5/7/2022 at 01:00 hours	5/7/2022 at 16:00 hours	The fuel gas combusted in the Reformer 3 heater exceeded the 162ppm H2S limit for fifteen (15) 3-hour averages.	During the refinery turnaround, because the SRUs and TIU system were offline, some of the high H_2S concentration process gas was routed to Chemtrade. An upset occurred in the East Side Amine strippers causing a pressure surge in the acid gas being sent to Chemtrade which caused their plant to trip offline. After Chemtrade tripped, the high H_2S process and purge gases were routed back to the refinery's flare gas recovery system, which ultimately went to the fuel gas system and caused the H_2S exceedance in the East Side Fuel gas.	While Chemtrade was coming back online after the trip, operations increased the temperature in the amine system to increase stripping and better treat the high H_2S gas being sent to the refinery fuel gas recovery system. The high H_2S process and purge gas was gradually transferred back to Chemtrade in order to keep Chemtrade from tripping off again, which would have led to another upset and increased emissions.	No	No Report	No Report